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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/945,536	08/30/2001	Paul A. Farrar	303.469US3	2426

21186 7590 08/21/2003

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.  
P.O. BOX 2938  
MINNEAPOLIS, MN 55402

EXAMINER
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EVERHART, CARIDAD

ART UNIT	PAPER NUMBER
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2825

DATE MAILED: 08/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application N .

09/945,536

Applicant(s)

FARRAR ET AL. *CR*

Examiner

Caridad M. Everhart

Art Unit

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-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 30 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 18-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-28,30 and 34-39 is/are allowed.
- 6) ☒ Claim(s) 29,31,34 and 40-44 is/are rejected.
- 7) ☒ Claim(s) 32 and 33 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Applicant's representative is thanked for the courtesy of the telephone interview of 8-7-03. However, regrettably, there was not reached agreement on the claims, therefore new rejections of claims 29, 31,34,and 40-44 follow.

Applicant's arguments with respect to claims 29, 31,34, 40-44 have been considered but are moot in view of the new ground(s) of rejection.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claim Rejections - 35 USC § 103***

Claims 29, 31,34, and 40-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee, et al. ("Lee")(US 5,665,659) or of Naito(US 5,750,439) in view of IBM Discl. Bull. Vol. 17, No. 10, pp 2867-2869("IBM").

Lee discloses high conductivity means which are doubly annealed. The alloy comprises Al, Si, and Cu(col. 7, lines 30-38). The first anneal temperature is 500-550 degrees C(col. 7, lines 62-67). The second anneal temperature is lower than the first (col. 8, lines 23-30). Lee teaches the inerconnect for use in ULSI(col. 1, lines 15-19).

Naito teaches interconnect for use in LSI(col. 1, lines 5-9). The alloy comprises Al and Si and Cu(col. 3, lines 35-40). The first anneal temperature is 450-500 degrees C(col. 3, lines 43-47). The second temperaturte is within the same temperature range, but may be greater than the first(col. 3, lines 60-67). Because a preferred second temperature is recited as 470(col. 3, lines 65-67), and the first

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temperature may be 500, this is interpreted as the second temperature being less than the first.

Neither Lee nor Naito disclose memory array, although both teach LSI or ULSI.

IBM is cited to show that memory array uses LSI, which would also include ULSI as a form of LSI.

One of ordinary skill in the art would have been motivated to have used the interconnect taught by Lee or by Naito in memory array metallization because both teach LSI or ULSI and these are taught by IBM to be used in memory array. With respect to a microprocessor coupled to the memory means, it is conventional in the art to couple a microprocessor to memory means, as the memory means is conventional as a storage device for a microprocessor.

***Allowable Subject Matter***

Claims 18-28, 30, 34-39 are allowed.

Claims 32 and 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caridad M. Everhart whose telephone number is 703-308-3455. The examiner can normally be reached on Monday through Fridays 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S. Smith can be reached on 703-308-1323. The fax phone

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numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

*C. Everhart*  
CARIDAD EVERHART  
PRIMARY EXAMINER

C. Everhart  
August 10, 2003

## Interview Summary

Application No.

09/945,536

Applicant(s)

FARRAR ET AL.

Examiner

Caridad M. Everhart

Art Unit

2825

All participants (applicant, applicant's representative, PTO personnel):

(1) Caridad M. Everhart.

(3)\_\_\_\_\_.

(2) Attorney Viet V. Tong.

(4)\_\_\_\_\_.

Date of Interview: 07 August 2003.

Type: a) ☒ Telephonic b) ☐ Video Conference  
c) ☐ Personal [copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☐ No.

If Yes, brief description: \_\_\_\_\_.

Claim(s) discussed: \_\_\_\_\_.

Identification of prior art discussed: \_\_\_\_\_.

Agreement with respect to the claims f) ☐ was reached. g) ☒ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Applicant's representative was advised that there were allowable claims, however that claim 31, for example, and some others did not contain the allowable limitations. Applicant's representative is thanked for the proposed amendment, which was unofficial and has been placed in the case, but not entered.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

\_\_\_\_\_  
Examiner's signature, if required